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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/592,436	06/12/2000	Lisa Cousins	571-651	5154

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EXAMINER

VANORE, DAVID A

ART UNIT PAPER NUMBER

2881

DATE MAILED: 12/03/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/592,436

Applicant(s)

COUSINS ET AL.

Examiner

David A Vanore

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 13-19 is/are rejected.
- 7) ☒ Claim(s) 10 and 12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The abstract of the disclosure is objected to because abstract contains speculative language for example in the last sentence. Furthermore, the language of the abstract is not a concise statement towards the technical content of the application. Specifically, the statement "...provides modulation of the alternating current signal applied whereby periods in which said alternating current signal is applied alternate with

periods in which said alternating signal is not applied." Correction is required. See MPEP § 608.01(b).

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Drawings

The drawings are objected to because Figures 5A and 5B are blurred and unclear to the point that the items to which reference numbers 50-53 point cannot be discerned. Correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant uses the term "MS3" in claim 1 without adequately defining said term. Applicant must define what the "M", the "S", and the term "MS3" in the claim mean.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 14, and 16-19 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Thomson et al.

Thomson et al. teaches a quadrupole mass analysis means using resonance excitation of a ion comprising an ion source (Fig. 1 Item 16), a collision cell (Fig. 1 Item 60), a variable power supply (Fig. 1 Item 48), a plurality of power sources connected to rod sets (Fig. 28A Items V1, V2, and 180), a first mass analysis section (Fig. 1 Item Q1), and a final mass analysis region (Fig. 1 Item Q3) wherein Thomson et al. teaches further the use of a time of flight device comprising a detector (Fig. 29 Item 206).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2-9, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomson et al.

In regards to claims 1, 5, 6, 7, 9 and 11, Thomson et al. teaches a quadrupole mass spectrometer analysis method comprising creating a stream of ions, passing said stream of ions through a mass selecting means (Fig. 1 Item Q1), supplying a stream of ions and a collision gas to a multipole, supplying an RF signal to a multipole,

fragmenting the ions within a collision gas chamber using an applied RF signal, modulating the AC signal in a multipole, and detecting an ion signal after fragmentation of ions using a mass spectrometer. (Col. 2 Line 1-65 and Col. 13 Line 50-65).

Thomson et al. fails to teach the application of a second or third RF current to the collision cell in order to create secondary or tertiary ion fragments.

The repetition of the essential step of fragmenting ions using an RF signal is a duplication of an essential step.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a second or third current to the multipole collision cell of Thomson et al. because the application of a second or third RF signal to the collision cell of Thomson et al. is a duplication of the well known step of applying an RF signal to confined ions to create ion fragments.

In regards to claims 2-4, Thomson et al. teaches all limitations as applied above but fails to teach the step of applying statistical analysis methods implemented by software and performed in real time.

Thomson et al. does disclose a data processing control means (Fig. 1 Item 50).

The use of statistical methods to analyze data is a matter of design choice.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a computer program to analyze data in real time with statistical methods because the use of statistical methods and computers to analyze data is conventional in the art.

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In regards to claim 8, Thomson et al. teaches all limitations as applied above including a quadrupole mass analysis method further comprising quadrupole rods with DC potential application means operatively connected to each set of rods (Col. 5 Line 6-12 and Col. 7 Line 15-29) to evacuate each rod region of ions.

The application of a DC potential to a mass analysis region is a matter of design choice.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the applied potential to evacuate the rod regions (Fig. 1 Q0, Q1, Q2, and Q3) because the use of an electric field to accelerate charged particles is conventional in the art.

In regards to claim 11, Thomson et al. teaches all limitations as applied above but fails to teach the subtraction to one spectrum from another.

The subtraction of one set of data from another is one of a selectable means to analyze data.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to subtract one set of data from another because the subtraction of a set of data from another set of data is well known in the art.

In regards to claim 15, Thomson et al. teaches all limitations as applied above but fails to teach a switch, two data storage devices, and a connection between said switching means a detector, data storage means, and signal modulation means.

Thomson et al. teaches a data control means (Fig. 1 Item 50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a switching means to select data acquired by the detector to be written to a data storage means because the data switching means and control means merely automates the selection of the location of the data to be stored depending on the applied signal.

Claim Objections

Claims 10 and 12 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 10 and 12 not been further treated on the merits.

Claim 15 objected to because of the following informalities: Claim 15 is drawn to depend on claim 13, but claim 13 recites a method not an apparatus. Examiner assumes that the claim 15, being an apparatus claim, is meant to depend on claim 14, the preceding apparatus claim. Appropriate correction is required.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 5,763,878 recites a multipole mass spectrometer and teaches the relative state of the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A Vanore whose telephone number is 703-306-0246. The examiner can normally be reached on M-F 7:30-5:00.

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The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-9797.

dav
November 15, 2001


KIET T. NGUYEN
PRIMARY EXAMINER